886167
**Pore pressures during Grand'Maison dam construction (In French)**
Clerdouet, D; Des Croix, P; Poupart, M
*Proc Ninth European Conference on Soil Mechanics and Foundation Engineering, Groundwater Effects in Geotechnical Engineering, Dublin, 31 Aug-3 Sept 1987 V1, P397-400. Publ Rotterdam: A A Balkema, 1987*

Construction of a 160m high earth dam in the French Alps, with a graded rockfill core and rockfill upstream slope protection, is described. 13 million cubic metres of fill were placed over 4 summers. Pore pressure buildup during summer and dissipation by consolidation during winter were monitored for the core. Measured results are compared to the predictions of finite element analyses.

886168
**Oedometric testing of swelling soils (In French)**
Didier, G; Soyez, B; Heriter, B; Parez, L
*Proc Ninth European Conference on Soil Mechanics and Foundation Engineering, Groundwater Effects in Geotechnical Engineering, Dublin, 31 Aug-3 Sept 1987 V2, P549-552. Publ Rotterdam: A A Balkema, 1987*

Traditional soil mechanics oedometric tests to determine magnitude of swelling and swelling pressure of expansive soils are described. Effects of conditions of constraint and their relation to in situ constraint, analysis in terms of total or effective stress, and of time and level of saturation and charging are discussed.

886169
**Swelling and collapsible behaviour of unsaturated cemented sand on wetting**
El-Sohby, M A; Elleboudy, A M
*Proc Ninth European Conference on Soil Mechanics and Foundation Engineering, Groundwater Effects in Geotechnical Engineering, Dublin, 31 Aug-3 Sept 1987 V2, P553-556. Publ Rotterdam: A A Balkema, 1987*

A sand from near Cairo, Egypt, was tested. Block samples were taken for geomechanical and mineralogical examination. Collapsibility and deformational behaviour in both normal state and on wetting were investigated. Results suggested that the sand was potentially collapsible,but on inundation at lower pressures, swelling occurred, the magnitude being primarily dependent on in situ density. It is recommended that at construction sites with high density cemented sands both swelling and collapse be studied.

## Dynamic properties

886170
**Estimated performance of Twitchell Island Levee System, Sacramento-San Joaquin Delta, under maximum credible earthquake conditions**
Finch, M O
*Bull Assoc Engng Geol V25, N2, May 1988, P207-217*

The stability of the suction-dredged sand toe berm of a levee in the Sacramento-San Joaquin Delta, an important source of fresh water, was investigated. A simplified procedure for evaluating liquefaction potential was used to estimate a factor of safety against liquefaction during maximum credible earthquakes. This gave a critical factor of safety of 1, and showed that the toe berm was susceptible to liquefaction,and the levee to failure, during an earthquake of magnitude 7 anywhere in the delta, or magnitude 6 within 14 miles of the levee. The displacement and drainage conditions during liquefaction are discussed.

886171
**Liquefaction at the Meloland Overcrossing during the Imperial Valley earthquake of 1979**
Norris, G M
*Bull Assoc Engng Geol V25, N2, May 1988, P235-247*

An earthquake of magnitude 6.4 seemed to have no effect on the Meloland Overcrossing. However, the modelled dynamic response showed a loss of correlation with recorded values after 5.3 seconds, and an absence of high frequency content suggested a filtering component. A modified level ground liquefaction analysis was undertaken and showed liquefaction occurred in 3 layers of the subsurface containing cohesionless material. One layer in particular affected the vertical capacity of the central pile group and consequently the rotational stiffness of the group, and the bridge came dangerously close to collapsing.

886172
**Analysis of amplitude and travel-time anomalies for short-period P-waves from NTS explosions**
Lynnes, C S; Lay, T
*Geophs J R Astr Soc V92, N3, March 1988, P431-443*

The strong azimuthal variation in short-period P-wave amplitudes from underground explosions in Nevada was investigated. The anomalies may be due to receiver effects, tectonic release interference, attenuation differences or near-source heterogeneity. A joint analysis of magnitude and travel-time anomalies measured from 57 explosions and 12 earthquakes was undertaken. Magnitude and travel-time anomalies show a positive correlation for NTS explosions and intersite differences, suggesting focusing and de-focusing by near source velocity heterogeneities.

886173
**On the absorption-dispersion characteristics of channel waves propagating in coal seams of varying thickness**
Dobroka, M
*Geophys Prospect V36, N3, April 1988, P318-331*

The WKB-method is used for the derivation of both the complex dispersion relation and displacement functions for Love channel-waves that propagate in a coal seam of varying thickness. The constant Q-model is used to describe the anelastic friction. With numerical solutions of the absorption-dispersion relation, the influence of thickness changes on the phase velocity and absorption coefficient of Love seam-waves is analysed at various frequencies. It is shown that the changes in seam thickness can be optimally detected around the average Airy-phase frequency. An equivalence is pointed out between the wave guide structures: homogeneous with varying seam thickness and horizontally inhomogeneous with constant seam thickness.

886174
**Seismic and electrical properties of unconsolidated permafrost**
King, M S; Zimmerman, R W; Corwin, R F
*Geophys Prospect V36, N4, May 1988, P349-364*

A simple model for predicting P and S wave velocities in unconsolidated permafrost as a function of porosity and extent of interstitial freezing is presented. The permafrost is idealised as an assemblage of spherical quartz grains in a matrix of spherical inclusions of water in ice. The wave scattering theory of Kuster and Toksoz is used to determine the effective elastic moduli and hence the acoustic velocities. Comparison with laboratory acoustic data from 31 samples shows good agreement. Electrical resistivity measurements on the permafrost samples demonstrate their essentially resistive